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**Neil A. Salmon
Frank Gumbmann**
Editors

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- 3 Emergent Active and Passive Imagers and Sensors
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Introduction

This year's conference contained an informative mix of millimetre wave and terahertz sensing technologies including spectroscopy up to 2.5 THz, radar systems at a range of frequencies from 10 GHz to 200 GHz and some emerging biometric security screening systems.

In the lower frequency bands full polarimetric radar concepts have been developed for security screening. There was an analysis of the detection process in low-cost glow discharge detectors and methods to increase the terahertz emission from semiconductor switches used in spectrometers and systems requiring illumination. Terahertz radiation has been used to measure the properties of graphene samples and chemical methods are developed to increase the penetration of terahertz radiation in samples for diagnostic purposes. Results were also presented on the remote sensing of moisture content in outside building walls, in an effort to understand heating losses in buildings. Work continued to be presented on the use of aperture synthesis, specifically on the design of low cost cross-correlators with hundreds of channels and on the field-of-views and spatial resolutions of portal security screening systems based on this modality of imaging.

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